



# **3Com® AirConnect® 9550 11n 2.4+5GHz PoE Access Point**

## **3Com® AirConnect® 9150 11n 2.4GHz PoE Access Point User Guide**

**[www.3com.com](http://www.3com.com)**

Part number: 10016853 USER  
GUIDE, AIRCONNECT 9550/9150  
11N 2.4/5GHZ AP  
M/N: WL-605 / WL-604  
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## **3Com Corporation 350 Campus Drive Marlborough, MA 01752-3064**

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# 1

## INTRODUCTION

The 3Com AirConnect 9550 11n 2.4+5GHz PoE Access Point and the 3Com AirConnect 9150 11n 2.4GHz PoE Access Point are high performance access points that allow you to join isolated wired Ethernet networks into a unified wireless local area network (WLAN). The Access Point (AP) supports Wi-Fi Protected Access security standards to provide a higher level of security for network data and communications. The AP is also fully compatible with IEEE 802.11a (the 9550 AP only), 802.11b, 802.11g, and 802.11n.

---

### Key Product Features

The product operates using 11a (9550 AP only), 11b, 11g, or 11n modes. This AP creates an enterprise-class wireless LAN, supporting up to 64 simultaneous users.

### Security

3Com offers one of the most robust suites of standards-based security on the market today. To protect sensitive data broadcast over the wireless LAN, 3Com supports Wireless Equivalent Privacy (WEP) and Wi-Fi Protected Access (WPA and WPA2).

3Com strengthens this basic security mechanism with additional security features, including MAC address access control lists, IEEE 802.1x per-port user authentication with RADIUS server authentication support, Temporal Key Integrity Protocol (TKIP), Advanced Encryption Standard (AES), Wireless Protected Access (WPA) and Extensible Authentication Protocol (EAP) support: EAP-MD5, EAP-TLS, EAP-TTLS, and PEAP.

## **Performance and Reliability**

3Com wireless access point performance features ensure reliable and seamless connections for users wherever they roam. Automatic channel selection automatically finds the least loaded channel for interference-free communication. Auto network connect and dynamic rate shifting keep users connected through a wide variety of conditions by changing to the optimum connection speed as they move through the network.

## **Manageability**

3Com offers a wide range of standards-based management support, from SNMP to 3Com Network Supervisor and HP OpenView for seamless integration with your wired network.

Wireless Infrastructure Device Manager and Wireless LAN Device Discovery tools let you configure parameters, run diagnostics, backup and restore configurations, and monitor performance from anywhere on the network using an embedded web server browser.

With Power over Ethernet (PoE) support, the same Category 5 cable that connects your access point to the data network also provides its power. A single cable installation dramatically improves your choice of mounting configurations because you no longer need to consider AC power outlet locations. PoE support makes it easier than ever to overcome installation problems with difficult-to-wire or hard-to-reach locations.

## Wireless Network Standards

Understanding the characteristics of the 802.11a and 802.11g standards can help you make the best choice for your wireless implementation plans.

### 802.11a

Ratified in 2002, 802.11a operates at the 5GHz band and supports data rates at up to 54Mbps. Because there are fewer devices in the 5GHz band, there's less potential for RF interference. However, because it is at an entirely different radio spectrum, it is not compatible with 802.11b and 802.11g.

The higher spectrum provides about 50m (164ft) of coverage. Consider 802.11a when you need high throughput in a confined space and you are:

- Running high-bandwidth applications like voice, video, or multimedia over a wireless network that can benefit from a five-fold increase in data throughput.

- Transferring large files like computer-aided design files, preprint publishing documents or graphics files, such as MRI scans for medical applications that demand additional bandwidth.
- Supporting a dense user base confined to a small coverage area. Because 802.11a has a greater number of non-overlapping channels, you can pack more wireless devices in a tighter space.

## **802.11b/g**

802.11b, 802.11g and 802.11n all operate in the 2.4GHz band. 802.11b can support data rate up to 11Mbps. 802.11g can support data rate up to 54Mbps. 802.11n can support data rate up to 300Mbps. They all support the widest coverage – up to 100m (328ft). It is however, subject to a greater risk of radio interference because it operates in the more popular 2.4GHz band.

Consider 802.11n when you need wider coverage and vendor compatibility and you are:

- Maintaining support for existing 802.11b and 802.11g users and the existing wireless investment while providing for expansion into 802.11n.
- Implementing a complete wireless LAN solution, including Ethernet Adapters, gateways, access points and clients; Wi-Fi certification guarantees compatibility among vendors.

- Providing access to hot spots in public spaces such as coffee shops or university cafeterias.

## **IEEE 802.3af**

The IEEE 802.3af-2003 Power over Ethernet (PoE) standard defines terminology to describe a port that acts as a power source (PSE) to a powered device (PD). The IEEE 802.3af standard states that power may be delivered by an end-point PSE, using either the active data wires of an Ethernet port or the spare wires, to a powered device. An end-point PSE, such as a Power over Ethernet capable Ethernet switch, may implement either scheme. If a mid-span PSE is used, then the mid-span PSE can only implement power delivery over the spare pairs of the copper cabling and cannot be used to deliver PoE over 100BASE-T connections. It should be noted that even if a device supports both methods of providing power, only one mechanism may be used to deliver power to a powered device.

The first mechanism is to use the data pairs (pins 1, 2 & 3, 6) to transmit power, which is sometimes referred to as "phantom" power. The second power delivery mechanism is to use the unused, from a 10/100BASE-T perspective, pairs (pins 4, 5 & 7, 8) to deliver power that is supported within mid-span power delivery.

## **Installing Your 3com Wireless Access Point**

To set up and install your 3Com Wireless Access Point, please refer to the 3Com® AirConnect® 9550 11n 2.4+5GHz PoE Access Point 3CRWE955075 / WL-605 3Com® AirConnect® 9150 11n 2.4GHz PoE Access Point 3CRWE915075 / WL-604 Quick Start Guide (Part Number 10016854).



# 2

## CONFIGURING THE WIRELESS ACCESS POINT

If the default AP configuration does not meet your network requirements, or if you want to customize the settings for your own network, you can use these tools to change the configuration:

- Launch the 3Com Wireless Infrastructure Device Manager (Widman) utility
- Directly connect to the device through its Ethernet port or console port

---

### Networks with a DHCP Server

If your network has a DHCP server, an IP address is automatically assigned to the AP. It takes between one and two minutes for the Access Point to determine if there is a DHCP server on the network. Use the 3Com Wireless Infrastructure Device Manager (Widman) included on the 3Com Installation CD to locate the Access Point on the network and view its IP address.

After you determine the AP's IP address, you can enter that IP address into a web browser on a computer on the same subnet to view the Access Point's system status or change its configuration.

---

## Networks without a DHCP Server

If your network does not have a DHCP server, the Access Point uses a factory assigned IP address (169.254.2.111). You can use that IP address to configure the Access Point, or you can assign a new IP address to the Access Point.

To verify that the Access Point is using the default IP address assigned at the factory:

- 1 Connect a computer directly to the Access Point using the supplied standard Category 5 UTP Ethernet cable.
- 2 Enter the Access Point's default IP address (169.254.2.111) into the computer's web browser. If the Configuration Management System starts, the Access Point is using the factory assigned IP address. You can configure the Access Point with the following login information:
  - Login name: **admin**
  - Password: **password**

If the Configuration Management System does not start, the Access Point is on a different subnet than the computer. Install and start the 3Com Wireless Infrastructure Device Manager to discover the Access Point's IP address.

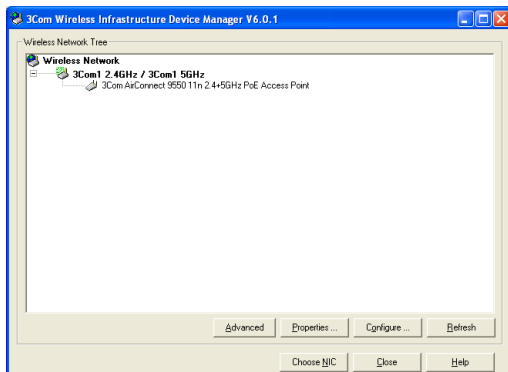
## Launch the 3Com Wireless Infrastructure Device Manager (Widman) utility

- 1 Turn on the computer.
- 2 Insert the 3Com Installation CD into the CD-ROM drive.  
The CD will Autorun. If it does not Autorun, you can start the setup menu from the Windows Start menu. For example: **Start > Run > d:\setup.exe**.
- 3 In the menu click **Tools and Utilities**.
- 4 In the next screen, click the software you want to install.
- 5 Follow the on screen instructions to complete the installation.  
Reboot the computer if prompted to do so.

## Launching the 3Com Wireless Infrastructure Device Manager

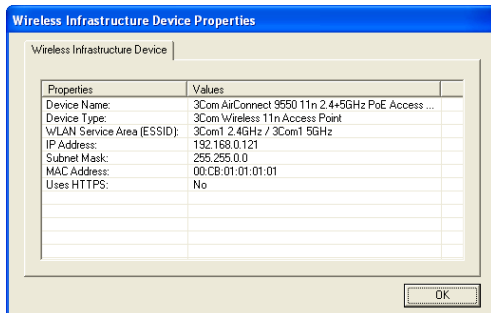
To be able to configure the Access Point you need to run the Wireless Infrastructure Device Manager. Go to **Start > Programs > 3Com Wireless > Wireless Infrastructure Device Manager**

If the device is working correctly the following screen should be seen.



**Figure 1** 3Com Wireless Infrastructure Device Manager

Click on the Properties button to see the following screen:



**Figure 2** Wireless Infrastructure Device Properties

Directly connect to the device through its Ethernet port or console port.

Follow the instructions below to log into the AP Configuration screen:

- 1 Load a web browser and enter **http://169.254.2.111**
- 2 The Log On screen appears



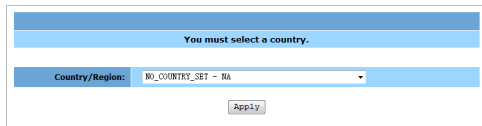
**Figure 3** Logon Screen

To log on to the Web interface:

- 1 Username, type **admin** (case sensitive)
- 2 Password, type **password**
- 3 Click **Log On**.

## First Time Only

After you have logged on for the first time you will be asked to select your country from the drop down menu.

A screenshot of a web form for country selection. It features a blue header bar with the text "You must select a country." Below this is a light blue input area containing a label "Country/Region:" followed by a dropdown menu showing "NO\_COUNTRY\_SET - NA". At the bottom right of the input area is a grey "Apply" button.

You must select a country.	
Country/Region:	NO_COUNTRY_SET - NA
<input type="button" value="Apply"/>	

**Figure 4** Country Selection

---

## System Status

The Web interface has been designed to enable you to easily perform advanced configuration tasks and view information about the AP.

## System Summary

After you click Log On from the Log On Screen, you'll see the system status page on the screen. The System summary page is the default page that will pop up once you successfully log on.

The system summary page shows all the configuration information about your AP, as shown in Figure 5.

**3com**

**Access Point**

**System Status**

- System Summary
- Wireless Status List
- Event Log List

**System Configuration**

- Setup Wizard
- System Properties
- IP Settings

**2.4G Radio Configuration**

- Wireless Network
- WDS Link Settings
- WDS Security Settings
- Wireless Advanced Settings
- QoS

**5G Radio Configuration**

- Wireless Network
- WDS Link Settings
- WDS Security Settings
- Wireless Advanced Settings
- QoS

**Service**

- Management VLAN
- SNTP
- SNTP
- Trunking

**Management**

- Administration
- Upgrade
- RAC Filtering
- Replay AP Selection
- Backup/Restore Settings
- Firmware Auto Upgrade
- Firmware Upgrade
- Reboot

**Log Off**

**AirConnect 9550 11n 2.4+5GHz PoE Access Point**

System Status -> System Summary ?

**System Information**

System Name	3Com AirConnect 9550 11n 2.4+5GHz PoE Access Point
Operation Mode	Access Point
Ethernet MAC Address	00:10:4C:11:55:01
2.4G Wireless MAC Address	00:10:4C:11:55:01
5G Wireless MAC Address	00:10:4C:11:55:01
Country	UNITED STATES
Firmware Version	AP Software 1.4.10 built on Jun 19, 2008

**Current IP Settings**

IP Address	192.168.0.100
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.97
DHCP Client	Enabled

**2.4G Radio**

Wireless Mode	2.4GHz 802.11b/g/n
Radio Band	Standard 10MHz Channel
Channel / Frequency	Channel 11 / 2462MHz
Primary Profile SSID	3Com 2.4GHz
Primary Profile Security	Open System
WDS	Disabled

**5G Radio**

Wireless Mode	5GHz 802.11a/n
Radio Band	Standard 10MHz Channel
Channel / Frequency	Channel 44 / 5210MHz
Primary Profile SSID	3Com 5 GHz
Primary Profile Security	Open System
WDS	Disabled

**Figure 5** System Summary



## Wireless Station List

Through the Wireless Station List page, you can easily identify the adjacent wireless stations. It will automatically observe the adjacent wireless station's ID (if specified), MAC address, SSID and current status.

The screenshot displays the web interface of an AirConnect 9550 11n 2.4+5GHz PoE Access Point. The left sidebar contains a navigation menu with the following sections:

- Access Point**
  - System Status
    - System Summary
    - Wireless Station List
    - Event Log List
  - System Configuration
    - Setup Wizard
    - System Properties
    - IP Settings
  - 2.4G Radio Configuration
    - Wireless Network
    - WDS Link Settings
    - WDS Security Settings
    - Wireless Advanced Settings
    - QoS
  - 5G Radio Configuration
    - Wireless Network
    - WDS Link Settings
    - WDS Security Settings
    - Wireless Advanced Settings
    - QoS
  - Service
    - Management VLAN
    - SNMP
    - SSH
    - TELNET
  - Management
    - Administration
    - SNMP
    - MAC Filter
    - Power off Detection
    - Backup/Restore Settings
    - Firmware Auto Upgrade
    - Firmware Upgrade
    - Reboot
- [Log Off](#)

The main content area is titled "AirConnect 9550 11n 2.4+5GHz PoE Access Point" and shows the "System Status -> Wireless Station List" page. It features two tables for monitoring wireless stations:

**2.4G Radio**

Station ID	MAC Address	SSID	Status	RSSI [dBm]
------------	-------------	------	--------	------------

**5G Radio**

Station ID	MAC Address	SSID	Status	RSSI [dBm]
------------	-------------	------	--------	------------

Below the tables is a "Refresh" button. The background of the main content area features a large, stylized graphic of two interlocking rings.

Figure 6 Wireless Station List

## Event Log List

The event log list stores a record of all the events within this designated WLAN.

**3COM**  
**Access Point**

System Status  
• System Summary  
• Wireless Status List  
• Event Log List

System Configuration  
• Setup Wizard  
• System Properties  
• IP Settings

2.4G Radio Configuration  
• Wireless Network  
• WDS Link Settings  
• WDS Security Settings  
• Wireless Advanced Settings  
• QoS

5G Radio Configuration  
• Wireless Network  
• WDS Link Settings  
• WDS Security Settings  
• Wireless Advanced Settings  
• QoS

Service  
• Management VLAN  
• DHCP  
• DHCP  
• SysLog

Management  
• Administration  
• SNMP  
• MAC Filtering  
• Rogue AP Detection  
• Backup/Restore Settings  
• Firmware Auto Upgrade  
• Firmware Upgrade  
• Reboot

[Log Off](#)

**AirConnect 9550 11n 2.4+5GHz PoE Access Point**

System Status -> Event Log List

No.	Time	Severity Level	Event
1	2009 Jan 01 00:05:05	Notice	Login successfully.
2	2009 Jan 01 00:05:01	Warning	Login failed from IP 192.168.0.110
3	2009 Jan 01 00:05:00	Notice	Logout from Web UI.

[Clear](#) [Refresh](#)

**Figure 7** Event Log List

---

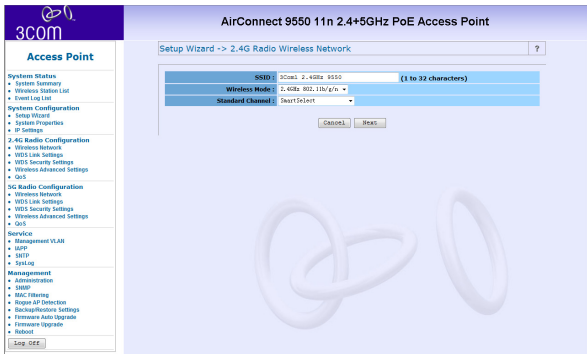
## System Configuration

In this section, you will learn how to configure the basic functions of your AP.

### Setup Wizard

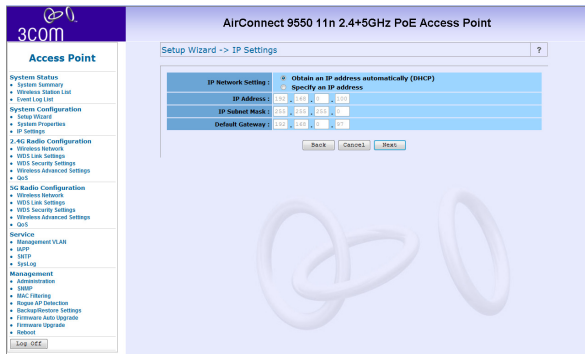
The Setup Wizard will walk you through setting up the AP. To start the Setup Wizard, click Setup Wizard.

- 1 **Figure 8** allows you to set up the following information:
  - **SSID** (Service Set Identifier) – This is the name of wireless network. Input 1-32 characters
  - **Wireless Mode** – Choose the required network mode from the drop down menu.
  - **Standard Channel** – Choose a channel from the drop down menu or select SmartSelect (recommended) to let the device select a channel.



**Figure 8** 2.4G Radio Wireless Network

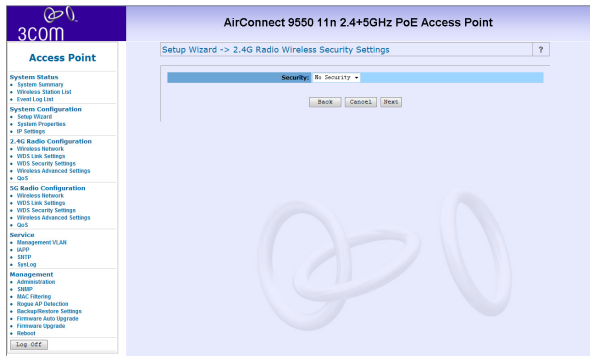
- 2 Click **Next** to continue the configuration or click **Cancel** to start again.
- 3 **Figure 9** allows you to set up the following information:
  - **IP Network Setting** – Check to either obtain an IP address via DHCP or specify an IP Address manually.
  - **IP Address** – Enter the IP address that you want to assign.
  - **IP Subnet Mask** – Enter your networks subnet address.
  - **Default Gateway** – If used, enter the gateway address that the device should go through.



**Figure 9** IP Settings

**4** **Figure 10** allows you choose the security settings. Choose from the following settings in the drop down menu:

- No security
- WEP
- WPA - Only
- WPA2 - Only
- WPA2 - Mixed



**Figure 10** 2.4G Wireless Security Settings

- 5 Click **Cancel** to close without saving, click **Finish** to save the settings, or click **Back** to return to Figure 9.

## System Properties

The System properties page allows you to define Device name, location, operation modes and Load Type.

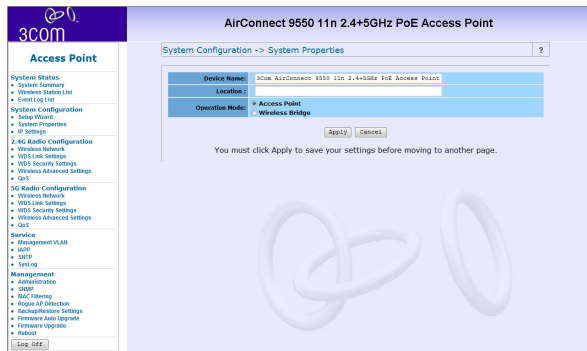
There are two operation modes to choose from:

## Access Point mode

A Wireless LAN data transceiver that uses radio waves to connect a wired network with wireless station.

## Wireless Bridge Mode

A wireless bridge connects two separate networks operating on the 802.11 standard.



**Figure 11** System Properties

## IP Settings

This setting must match the network's method of IP address assignment. Choose Dynamic Host Configuration Protocol (DHCP) or Static IP. With DHCP, IP addresses are assigned for predetermined periods of time. Choose Static IP if your network does not have an automatic system for IP address assignment.

**3COM**  
**Access Point**

- System Status
  - System Summary
  - Wireless Station List
  - Event Log List
- System Configuration
  - Setup Wizard
  - System Properties
  - IP Settings
- 2.4G Radio Configuration
  - Wireless Network
  - WDS Link Settings
  - WDS Security Settings
  - Wireless Advanced Settings
  - QoS
- 5G Radio Configuration
  - Wireless Network
  - WDS Link Settings
  - WDS Security Settings
  - Wireless Advanced Settings
  - QoS
- Service
  - Management VLAN
  - SNMP
  - SNTP
  - Trunking
- Management
  - Administration
  - SNMP
  - NAC Filtering
  - Rogue AP Detection
  - Backup/Restore Settings
  - Firmware Auto Upgrade
  - Firmware Upgrade
  - Reboot

[Log Off](#)

**AirConnect 9550 11n 2.4+5GHz PoE Access Point**

System Configuration -> IP Settings ?

**IP Network Setting:** ☒ Obtain an IP address automatically (DHCP) ☐ Specify an IP address

**IP Address:** 192.168.1.100

**IP Subnet Mask:** 255.255.255.0

**Default Gateway:** 192.168.1.1

**Web GUI Protocol:** ☒ HTTP ☐ HTTPS

**HTTP Port:** 80

**HTTPS Port:** 443

[Apply](#) [Cancel](#)

You must click Apply to save your settings before moving to another page.

**Figure 12** IP Settings



## Wireless Network

The Wireless Access Point supports Multiple SSIDs which allows it to act as multiple APs appearing in a Wireless LAN network. You can configure up to 4 SSIDs on the device.

The screenshot displays the configuration interface for an AirConnect 9550 11n 2.4+5GHz PoE Access Point. The left sidebar shows the navigation menu with categories like System Status, System Configuration, 2.4G Radio Configuration, 5G Radio Configuration, Service, and Management. The main content area is titled "5G Radio Configuration -> Wireless Network".

At the top, there are dropdown menus for "Wireless Mode" (set to 802.11a/n), "Radio Band" (set to Standard 20MHz Channel), "Standard Channel" (set to AutoSelect), and "Extension Channel" (set to -).

Below these is a table titled "Current Profiles" with columns: Primary, SSID, Security, VID, Enable, and Edit.

Primary	SSID	Security	VID	Enable	Edit
*	3Com1 5GHz	Open System	1	<input checked="" type="checkbox"/>	Edit
*	3Com2 5GHz	Open System	2	<input type="checkbox"/>	Edit
*	3Com3 5GHz	Open System	3	<input type="checkbox"/>	Edit
*	3Com4 5GHz	Open System	4	<input type="checkbox"/>	Edit

Below the table, there are radio buttons for "Profile (SSID) Isolation":

- ☒ No Isolation
- ☐ Isolate all Profiles (SSIDs) from each other
- ☐ Use VLAN (802.1Q) standard

At the bottom of the configuration area are "Apply" and "Cancel" buttons.

A message at the bottom states: "You must click Apply to save your settings before moving to another page."

Figure 13 Wireless Network

## Wireless Mode

You can select your desired wireless operating mode from the drop-down box.

## Standard Channel

Select the channel for your wireless LAN in Standard Channel block. The default setting is SmartSelect. It selects the channel which provides the best transmission quality. The available frequencies vary depending on which wireless mode you select.

## Current Profiles

A maximum of four profiles can be configured. Check the **Enable** button to activate a profile. Click the **Edit** button to change its configuration.

System Configuration -> Wireless Network -> SSID Profile Settings

SSID: SOME SSID (1 to 32 characters)

BSSID: 00 11 22 33 44 55

Suppressed SSID ☐

☐ No VLAN tag

☒ Specified VLAN ID: 1  
(must be in the range 1 ~ 4095.)

Priority: Size ▾

Station Separation: ☒ Enable ☐ Disable

Security: No Security ▾

Save Cancel Close

**Figure 14** SSID Profile Settings

## SSID

Service Set Identifier. This is the assigned name for a wireless Wi-Fi network. Stations must use this unique identifier to communicate with an Access Point. The SSID can be any alphanumeric entry up to a maximum of 32 characters.

## BSSID

Basic Service Set Identifier. This is the assigned MAC address of the station in the access point. This unique identifier is in Hex format.

## Suppressed SSID

If you want to disable the broadcast of your SSID, you should check the **Suppressed SSID** box. It is also known as SSID Broadcast disable or Hide SSID.

## VLAN ID

If your network uses VLANs, you can assign an SSID to a VLAN. Client devices using the SSID are grouped in that VLAN.

## Station Separation

Enable Station Separation if you want to prevent stations connected to this profile from accessing each other.

## Security

There are four levels of security available and all have differing properties:

## WEP

Wired Equivalent Privacy data encryption provides data security. WEP Share Key authentication and WEP data encryption will block all but the most determined hacker.

System Configuration -> Wireless Network -> SSID Profile Settings

SSID: DCom1 SSID (1 to 32 characters)		
BSSID: 00 : 10 : 00 : 00 : 00 : 00		
Suppressed SSID: <input type="checkbox"/>		
VLAN ID: <input type="checkbox"/> No VLAN tag <input checked="" type="checkbox"/> Specified VLAN ID: 1 (must be in the range 1 ~ 4095.)		
Priority: <input type="button" value="None"/>		
Station Separation: <input checked="" type="radio"/> Enable <input type="radio"/> Disable		
Security: WEP		

WEP setting		
Authentication type: Open System		
Shared key input type: GUI		
Enter all four shared keys, then select a key by clicking a radio button:		
Default Key	Shared Key	Key Length
<input checked="" type="radio"/> #1	*****	42/54-bit (10 hex digits/ 5 ascii keys)
<input type="radio"/> #2		Same
<input type="radio"/> #3		None
<input type="radio"/> #4		None

Save Cancel Close

**Figure 15** SSID Profile Settings

- 1 To add WEP, from the drop down list choose **open-system** or **shared key** authentication.
- 2 Select the desired input method (HEX or ASCII)
- 3 From the drop down list choose from 40/64, 104/128, 128/152 key lengths.

## WPA Only

Wi-Fi Protected Access was constructed to provide improved data encryption, (which was weak in WEP), and to provide user authentication.

System Configuration -> Wireless Network -> SSID Profile Settings

SSID:	3Com-5Gite (1 to 32 characters)
BSSID:	00 : 14 : 48 : 00 : 00 : 00
Suppressed SSID:	<input type="checkbox"/>
VLAN ID:	<input type="radio"/> No VLAN tag <input checked="" type="radio"/> Specified VLAN ID 1 (must be in the range 1 ~ 4095.) Priority: None
Station Separation:	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Security:	WPA-Only
Cipher Type:	TKIP
Group Key Update Interval:	1800 [30-3600] seconds (0: Disabled)
Authentication Mode:	PSK 802.1X
PassPhrase:	(8-63 ASCII characters or 64 hexadecimal digits)
RADIUS Server:	
RADIUS Port:	1812
RADIUS Secret:	

Save Cancel Close

**Figure 16** SSID Profile Settings

Only allows WPA clients to connect to the VAP.

You can choose TKIP or AES as the encryption method

The Group key update interval is configurable; the default value is 1800 seconds

You can choose personal mode (PSK) or enterprise mode (802.1X) authentication. The default is PSK.

If you choose PSK, you will need to enter a pass phrase of 8-63 ASCII characters or 64 hexadecimal digits.

If you choose 802.1X, you will need access to a RADIUS server, port and secret.

## **WPA2-Only**

Only allows WPA 2 clients to connect to the VAP.

You can choose TKIP or AES for the encryption method

The Group key update interval is configurable, with a default value of 1800 seconds

You can choose personal mode (PSK) or enterprise mode (802.1X) authentication. The default is PSK.

If you choose PSK, you will need to enter a pass phrase of 8-63 ASCII characters or 64 hexadecimal digits.

If you choose 802.1X, you will need access to a RADIUS server, port and secret.

## WPA2-Mixed

Only allows WPA and WPA2 clients to connect to the VAP.

You can choose TKIP or AES as the encryption method.

The Group key update interval is configurable, with a default value of 1800 seconds.

You can choose personal mode (PSK) or enterprise mode (802.1X) authentication. The default setting is PSK.

If you choose PSK, you will need to enter a pass phrase of 8-63 ASCII characters or 64 hexadecimal digits.

If you choose 802.1X, you will need access to a RADIUS server, port and secret.

## Profile (SSID) Isolation

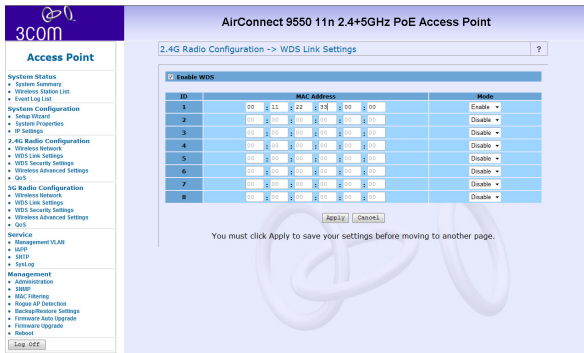
Stations connected to different profiles cannot access each other.

Choose from **No Isolation** (Full access), or to Isolate all Profiles (SSIDs) from each other, check **use VLAN (802.1Q) standard**.

## WDS Link Settings

Wireless Distribution System (WDS) allows access points to communicate with one another wirelessly in a standardized way. It can also simplify the network infrastructure by reducing the amount of cabling required.





**Figure 17** WDS Link Settings

Supports up to 8 point to multipoint WDS links. Check **Enable WDS** and then **Enable** on the MAC addresses want to link to. Enter the MAC addresses of any other APs you want to link to.

Example of a WDS topology:

AP1 <-- WDS --> Master AP (our AP) <-- WDS --> AP3 <-- WDS --> AP4

## WDS Security Settings

The screenshot shows the configuration interface for a 3COM AirConnect 9550 11n 2.4+5GHz PoE Access Point. The left sidebar contains a tree view with categories like System Status, System Configuration, 2.4G Radio Configuration, 5G Radio Configuration, Service, and Management. The main content area is titled 'AirConnect 9550 11n 2.4+5GHz PoE Access Point' and shows the '5G Radio Configuration -> WDS Security Settings' page. The configuration fields are as follows:

Field	Value
Security	None
WEP Key	40 (64-bit/10 hex digits)
Passphrase	characters or 64 hexadecimal digits (0-63 ASCII)

Below the fields, there is a notice: "Notice: When using WPA-PSK, the SSID setting among WDS peers should be identical." and two buttons: "Apply" and "Cancel". At the bottom, a message states: "You must click Apply to save your settings before moving to another page." The background of the main area features a large, faint image of a knot.

**Figure 18** WDS Security Settings

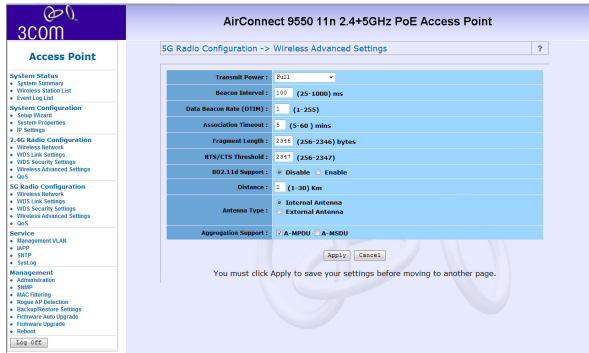
Choose the required security level from:

- None
- WEP
- WPA-PSK (TKIP)
- WPA-PSK (AES)

If using **WEP** security, enter the WEP key. If using **WPA**, enter the pass phrase.

## Wireless Advanced Settings

To configure advanced wireless settings, click **Wireless Advanced Settings**. The toolbar and Wireless Advanced Settings menu appears.



**Figure 19** Wireless Advanced Settings

## Transmit Power

Choose one of the following power levels: Full, Half (-3dB), Quarter (-6dB), Eighth (-9dB) or Minimum. The default is Full.

## **Beacon Interval**

Choose an interval time between 25ms and 1000ms for each beacon transmission. The default is 100ms.

## **Data Beacon Rate**

The Delivery Traffic Indication Message (DTIM). Specify the data beacon rate between 1 and 255. The default is 1.

## **Association Timeout**

Set the value for the maximum time allowed for a wireless association to be established. When this time is exceeded, the connection is lost. The default value is 5 mins.

## **Fragment Length**

Specify maximum packet size used for fragmentation. Packets larger than the size programmed in this field will be fragmented. The Fragment Threshold value must be larger than the RTS Threshold value. The default is 2346.

## **RTS/CTS Threshold**

Request To Send threshold. Specify the packet size used to determine if it should use the CSMA/CA mechanism or the CSMA/CD mechanism.

## 802.11d support

802.1d allows the device to communicate in areas where the 802.11 standard is not allowed. It adds features and restrictions to ensure compliance.

### Distance

The maximum distance between client or AP and device. The default value is 1km.

### Antenna Type

If you would like to use external antennas (to replace the original internal antennas), check **External Antenna**. Then specify one of the antenna types from the drop down menu, where the options are:

- 3CWE591 3com 6/8dBi Dual-Band Omni Antenna
- 3CWE596 3com 18/20dBi Dual-Band Panel Antenna
- 3CWE598 3com 8/10dBi Dual-Band Panel Antenna

### Aggregation Support

Sets the aggregation type:

- A-MPDU : Aggregate MAC protocol data unit.
- A-MSDU : Aggregate MAC service data unit.

The default value is A-MPDU.

## QoS

This section provides the administrator with the Quality of Service (QoS) data.

The QoS setting is only available in AP Mode.

The QoS Setting should be modified with caution because radio behavior is affected. These parameters can be modified when QoS service is Enabled.

## Service

### Management VLAN

If you reconfigure the Management VLAN ID, you may lose connectivity to the access point. Verify that the switch and DHCP server can support the reconfigured VLAN ID, and then re-connect to the new IP address.

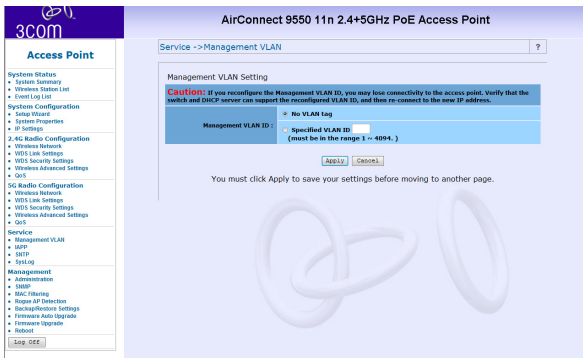


Figure 20 Management VLAN

## IAPP

## Inter-Access Point Protocol (IAPP)

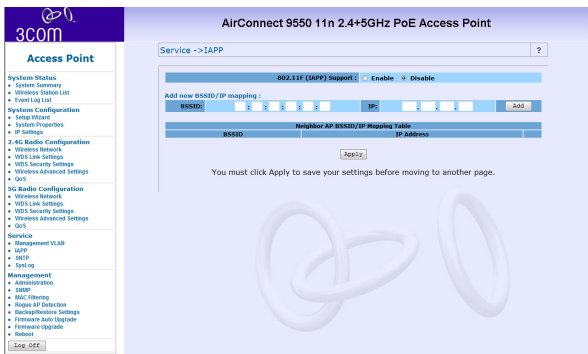


Figure 21 IAPP

**802.11F (IAPP) Support**

Choose either Enable or Disable

IAPP allows multiple access points to communicate and pass location information about their associated stations. If you enable 802.11F support you should manually add BSSID/IP mapping:

- 1 Enter the BSSID and IP addresses of the AP.





## 2 Click **Add**

Only stations roaming from one of the listed APs to this AP are allowed to re-associate with this AP. Others will be requested to go through the full association process.

**3COM**  
**Access Point**

**System Status**

- System Summary
- Wireless Station List
- Event Log List

**System Configuration**

- Setup Wizard
- System Properties
- IP Settings

**2.4G Radio Configuration**

- Wireless Network
- WDS Link Settings
- WDS Security Settings
- Wireless Advanced Settings
- QoS

**5G Radio Configuration**

- Wireless Network
- WDS Link Settings
- WDS Security Settings
- Wireless Advanced Settings
- QoS

**Service**

- Management VLAN
- SNMP
- SNTP
- System

**Management**

- Administration
- Log
- MAC Filtering
- Roaming AP Detection
- Backup/Restore Settings
- Firmware Auto Upgrade
- Firmware Upgrade
- Radius

**Log Off**

**AirConnect 9550 11n 2.4+5GHz PoE Access Point**

5G Radio Configuration -> WME Parameters of Access Point

WME ( QoS ) : ☒ Enable ☐ Disable

Ack Policy : ☒ ☐

AC TYPE	Min Contention Window (2 <sup>0-15</sup> ; x can be 0-10)	Max Contention Window (2 <sup>0-15</sup> ; x can be 0-10)	Fixed Slot Time (0-15)	Transmittal Opportunity (0-65535 μs)	Admission Control
AC_BK	1	10	7	0	<input checked="" type="checkbox"/>
AC_BE	4	6	9	0	<input checked="" type="checkbox"/>
AC_VL	3	4	1	0000	<input checked="" type="checkbox"/>
AC_VO	2	2	1	1554	<input checked="" type="checkbox"/>

You must click Apply to save your settings before moving to another page.

**Figure 22** WME Parameters of Access Point

## Ack-Policy

When the Ack-Policy is checked. The device will not send ACK frames. The default value is disabled.

Setting	Description
Min Contention Window	For each access category, enter the minimum contention window value. Channel access is prioritized by assigning smaller contention window values to a higher priority traffic class. If a channel is busy or a transmission collides, a node chooses a random number between 0 and the current contention window minimum.
Max Contention Window	For each access category, enter the maximum contention window value. The minimum contention window value is doubled each time a collision occurs until the maximum is reached. A small contention window value decreases the access delay but increases the probability of a collision.
Fixed Slot Time	For each access category, enter the fixed slot time. Channel access can be strictly prioritized by assigning smaller contention window values to a higher priority traffic class. Traffic in the access category must wait for this fixed number of slots after each packet is received before resuming its random back-off.
Transmit Opportunity Limit	Enter the number of microseconds that qualified transmitters can transmit through the normal back-off procedure with a set of pending packets. Larger values allow a client to control the channel for longer periods of time, allowing it to achieve higher throughput in this access category at the expense of longer access times for all access categories.

Setting	Description
Admission Control	<p>Note: In this release, clients are blocked from using an access category when they select Enable for Admission Control. The Admission Control check box controls client use of the access categories. When you enable admission control for an access category, clients associated to the access point must complete the WMM admission control procedure before they can use that access category. However, access points do not support the admission control procedure in this release, so clients cannot use the access category when you enable Admission Control.</p> <p>default : disable</p>

The default value table:

AC TYPE	Min Contention Window (2x-1; x can be 0-10)	Max Contention Window (2x-1; x can be 0-10)	Fixed Slot Time (0-15)	Transmit Opportunity (0-65535 $\mu$ S)
AC_BK	4	10	7	0
AC_BE	4	6	3	0
AC_VI	3	4	1	3008 (6016 when 11b)
AC_VO (3)	2	3	1	1554 (3264 when 11b)

SNTP

Simple Network Time Protocol (SNTP) allows the administrator to configure the network time settings.

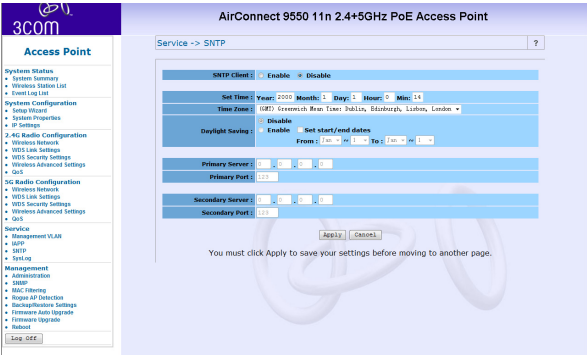


Figure 23 SNTP

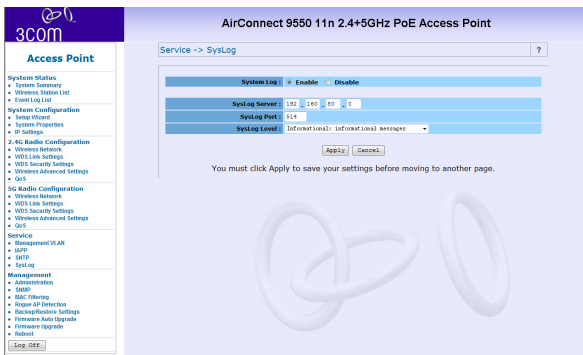
The following settings can be configured.

SNTP client enable/disable	<p>Click enable or disable.</p> <p>If it is disabled, the user has to input time manually.</p> <p>If it is enabled, the device will try to fetch time from configured SNTP servers.</p>
Set Time	<p>Specify Year, Month, Day, Hour, and Minute.</p> <p>These fields are grayed out and un-configurable if SNTP is enabled.</p>
Timezone selection	<p>This selection adjusts the time obtained from the SNTP server.</p> <p>Note: This selection does not affect manual time input as they are considered to be input at the same time.</p>
Daylight Saving	<p>The start/end date of daylight saving changes automatically based on the time zone selection.</p> <p>Note: Start and End dates can be input manually, to avoid any regional policy changes.</p>
Primary and Secondary SNTP server/port setting	<p>If SNTP is enabled, this device will try to fetch time from the Primary server first. The timeout for Primary NTP server is 5 seconds.</p> <p>If the Primary NTP server fails after 5 seconds the Secondary NTP server will be tried for 5 seconds.</p> <p>In the event that the Secondary server fails, the device will wait for 60 seconds before trying the Primary server again. This continues until a time is available.</p>

To avoid using an invalid NTP server address, this device stores the fetched/configured time. After it boots up, it uses the stored time first and adjusts time if time is fetched.

## Syslog Function

In the event of an error the device can send a message to a specified server.



**Figure 24** SysLog

## System Log

Click either Enable or Disable to activate or deactivate the system log function.

## Syslog Server

Enter the IP address of the server that receives the error information. The default IP address is 0.0.0.0

## Syslog Port

Enter the port number that your server can be accessed by. The default port number is 514.

## Syslog Level

Choose from the following levels, listed in order of severity of the detail to be recorded. The default setting is Error.

- Emergency - System is unusable
- Alert - Action must be taken immediately
- Critical - Critical condition
- Error - Error condition
- Warning - Warning condition
- Notice - Normal, but significant condition
- Informational - Informational messages

## Management

This section describes how to use the management and information features of your Wireless Access Point.

### Administration

In this section, you can change the user administrator name and password. The default Administrator name is **admin** (case sensitive), and password is **password**. Click Apply to save changes.

**3COM**  
**Access Point**

**System Status**

- System Summary
- Wireless Station List
- Event Log List

**System Configuration**

- Setup Wizard
- System Properties
- IP Settings

**2.4G Radio Configuration**

- Wireless Network
- WDS LAN Settings
- WDS Security Settings
- Wireless Advanced Settings
- QoS

**5G Radio Configuration**

- Wireless Network
- WDS LAN Settings
- WDS Security Settings
- Wireless Advanced Settings
- QoS

**Service**

- Management VLAN
- IGMP
- SNMP
- SSH Log

**Management**

- Administration
- Log
- MAC Filtering
- Rogue AP Detection
- Backup/Restore Settings
- Firmware Auto Upgrade
- Firmware Upgrade
- Reboot

**AirConnect 9550 11n 2.4+5GHz PoE Access Point**

Management -> Administration

**Administrator Name :** admin

**Password :** password

**Confirm Password :** password

**Only Wired LAN Management :** ☒ Enable ☐ Disable

You must click Apply to save your settings before moving to another page.

**Figure 25** Administration



## SNMP

The screenshot displays the management interface for a 3Com AirConnect 9550 11n 2.4+5GHz PoE Access Point. The left sidebar contains a navigation menu with categories like System Status, System Configuration, 2.4G Radio Configuration, 5G Radio Configuration, Service, and Management. The main content area is titled 'Management -> SNMP' and shows the following configuration fields:

- SNMP:** ☒ Enable ☐ Disable
- SNMP Version Support:** ☒ SNMP v1 ☒ SNMP v2
- Contact:**
- Community Name (Read Only):**
- Community Name (Read/Write):**
- Trap Destination IP Address:**
- Trap Destination Community Name:**

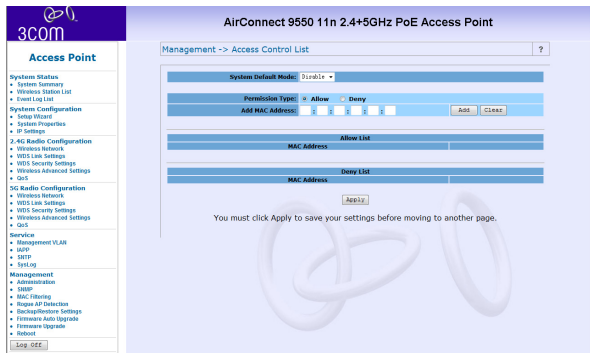
At the bottom of the form are 'Apply' and 'Cancel' buttons. Below the form, a message states: 'You must click Apply to save your settings before moving to another page.'

**Figure 26** SNMP

The Simple Network Management Protocol (SNMP) administrative functions are changed through this screen. The following functions can be changed:

- Enable/Disable SNMP
- Contact info
- Community names for read-only and read/write
- Trap destination IP address
- Community name

## MAC Filtering



**Figure 27** Access Control List

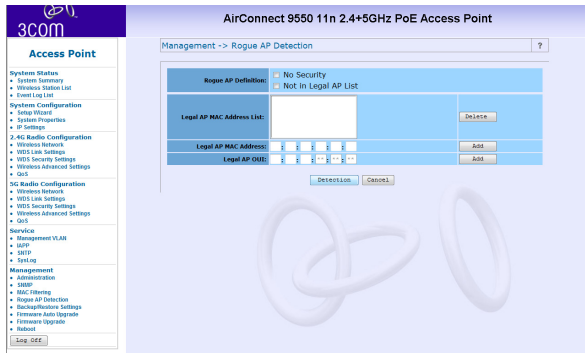
MAC filtering allows the administrator to filter MAC addresses of network cards that can access the access point. On this screen you can:

- Enable/Disable filter
- Change filter rule to allow or deny
- Add/delete MAC addresses in the filter table

This function is only available in AP mode.



## Rogue AP Detection



**Figure 28** Rogue AP Detection

Unspecified Access Points may try to access the network through this device. Rogue AP detection can prevent this.

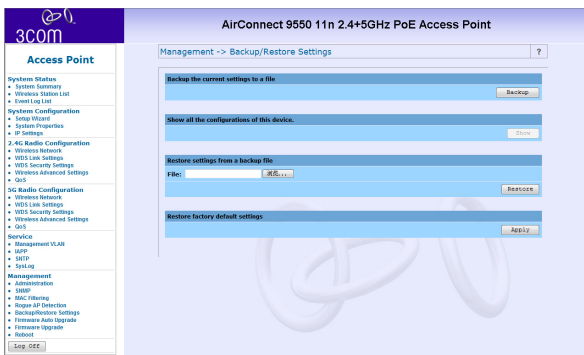
- Change Rogue AP definition.
- Legal AP list - The list of allowed access points.
- Detect rogue AP – All channels are scanned and Access Points without security, or not in legal AP, are considered rogue.



*This function is only available in AP mode.*

## Backup/ Restore Settings

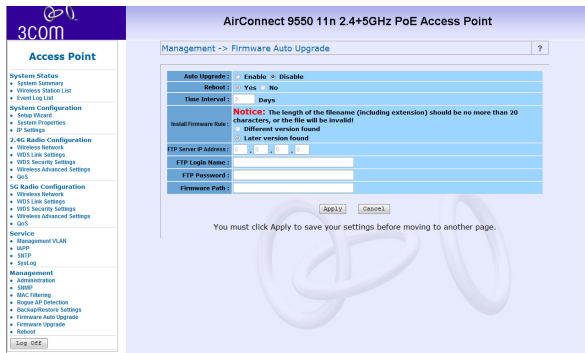
This screen allows the user to backup the Access Point's current settings and restore back to the factory default. Once you have the Access Point working properly you should backup the information to have it available if something goes wrong.



**Figure 29** Backup/Restore Settings

## Firmware Auto Upgrade

The Wireless Access Point can auto upgrade the firmware if there is a newer version available. If you enable the Auto Upgrade function, the Wireless Access Point will automatically check for an updated version of firmware in the assigned FTP server for each time interval assigned. Remember to insert the correct FTP server IP address, username, password, and path to the FTP server.



**Figure 30** Firmware Auto Upgrade

## Firmware Manual Upgrade

On this screen, you can see the current firmware version of your AP. You can also manually upgrade your firmware by entering the path to your new firmware file.



**Figure 31** Firmware Upgrade

Once you have chosen the upgrade file click **Upgrade**.

The screenshot displays the web management interface of a 3Com AirConnect 9550 11n 2.4+5GHz PoE Access Point. The interface is divided into a left sidebar and a main content area. The sidebar, titled 'Access Point', contains a tree view of configuration categories: System Status, System Configuration, 2.4G Radio Configuration, 5G Radio Configuration, Service, and Management. The main content area shows the 'Firmware Update' process, indicating a successful update with 576/454 Bytes received. A reminder to reboot is displayed, and a large 3D graphic of interlocking rings is visible in the background.

**3com**

**Access Point**

- System Status
  - System Summary
  - Wireless Station List
  - Event Log List
- System Configuration
  - Setup Wizard
  - System Properties
  - IP Settings
- 2.4G Radio Configuration
  - Wireless Network
  - WDS Link Settings
  - WDS Security Settings
  - Wireless Advanced Settings
  - QoS
- 5G Radio Configuration
  - Wireless Network
  - WDS Link Settings
  - WDS Security Settings
  - Wireless Advanced Settings
  - QoS
- Service
  - Management VLAN
  - MAP
  - SMTP
  - Snifflog
- Management
  - Administration
  - QoS
  - MAC Filtering
  - Rogue AP Detection
  - Bandwidth/Power Settings
  - Firmware Auto Upgrade
  - Firmware Upgrade
  - Reboot

[Log Off](#)

**AirConnect 9550 11n 2.4+5GHz PoE Access Point**

Management -> [Firmware Update](#) -> [Result](#)

**Firmware Updated Successfully**

**Receive: 576/454 Bytes**

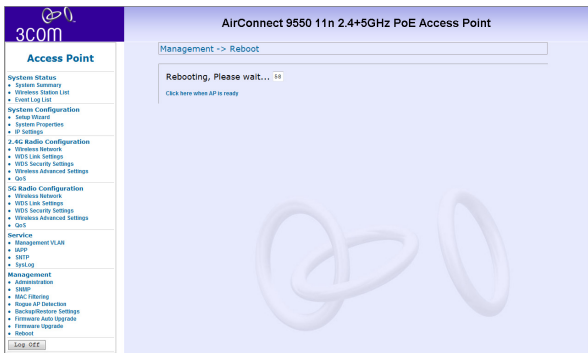
Reminder: Go to the [Reboot Page](#) for changes to take effect

Figure 32 Result

## Rebooting

You can reboot the Wireless access point from the browser interface.

After you click reboot, the following window displays.



**Figure 33** Reboot

After rebooting, the login page automatically displays.



---

## Connecting Through the Com Port

Instead of using an IP address to configure the Access Point a Null modem cable, connected to the RJ-45 Console Port, can be used.

In your terminal settings ensure that the following configuration is met:

- Bits per Second – 15200
- Data Bits – 8
- Parity – None
- Stop bits – 1
- Flow Control - none

Once connected enter the user name and password. The default values are as follows:

- Username: **admin**
- Password: **password**

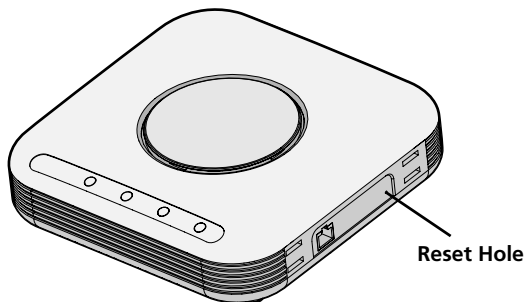
Once logged in, type “?” for a list of commands.

---

## Restoring Factory Settings

The Access Point can be reset to the default factory settings either through the web browser (see “Backup/ Restore Settings” on page 56) or manually.

To restore the settings manually, insert a pointed object (such as the end of a straightened paper clip) into the reset hole on the side of the Access Point, and hold for five seconds.



**Figure 34** Reset Hole Location

# A TROUBLESHOOTING

---

## Diagnosing Problems

If you have difficulty with the Access point, try the following solutions.

### Symptom

After you change the IP address, restore a backup configuration, or reset the Access Point to factory defaults, the Configuration Management System stops responding and you cannot continue configuring the Access point. If you change the IP address and click Apply, you cannot continue to configure the device using the old IP address. Similarly, after you restore a backup configuration or reset the Access Point to factory defaults, the IP address setting may be changed.

### Solution

To recover from this situation and continue configuring the Access Point:

- 1 Close your browser.

- 2 Return to the 3Com Wireless Infrastructure Device Manager and click Refresh.
- 3 Select the device and click Configure to start a new configuration session and set its IP address.

**Symptom**

The Wireless Network Tree does not appear in the 3Com Wireless Infrastructure Device Manager window.

**Solution**

Verify that you are using the correct network adapter. In the device manager window, click Choose NIC. Select the network adapter for the network you want to scan, and click OK.

**Symptom**

The Access point has a yellow exclamation point (!) next to it in the Wireless Infrastructure Device Manager.

**Solution**

The Access Point is on a different subnet than the computer attempting to configure it. To recover from this situation and continue configuring the Access point:

- 1 Close your browser.
- 2 Return to the 3Com Wireless Infrastructure Device Manager and click Refresh.
- 3 Select the device and click Configure to start a new configuration session.

- 4 Make sure the subnet address matches that of the computer.

**Symptom**

Two Access Points cannot communicate in ad-hoc mode.

**Solution**

Adjust the positions of the Access Points to improve reception.

To ensure correct operation in ad-hoc mode, the settings on the two Access Points must match exactly.

Launch the Access Point Configuration Management System and make sure that the Wireless LAN Service Area, channel selections, Data Preamble setting, and security setting are the same on both Access points.

**Symptom**

You are running Windows NT. After you connect the Access Point, your computer cannot obtain a valid IP address.

**Solution (s)**

The Access Point configuration settings may not be compatible with the network. If they are not, and your Windows NT computer is set up to obtain its IP address from a DHCP server, the Access Point is unable to associate with the network to obtain the IP address.

To work around this, set a static IP address on your computer. Then set the Access Point configuration to match the network. When the Access Point is able to associate, reset your computer to obtain its IP address from the DHCP server. If the Access Point

should also obtain its IP settings from the DHCP server, make sure this is configured properly on the IP Network page and applied just before ending the session.

### **Symptom**

Disconnecting the Access Point

### **Solution**

To disconnect the Access Point:

**CAUTION:** Disconnecting the Access Point ends the network association. To avoid possible data loss, exit all networking applications on connected devices before you disconnect the Access Point.

- 1 Unplug the Access point Ethernet cable from the hub or other device.
- 2 Unplug the Access point power cord.

### **Symptom**

Uninstalling Software and Documentation

### **Solution**

If you want to uninstall the 3Com 11a/b/g/n Wireless Workgroup Access point software and documentation, you can either use the standard operating system procedure for removing programs or use the following shortcut:

From the Windows Start menu, select Start > Programs > 3Com Wireless > Uninstall 3Com Wireless Infrastructure Device Manager.

When prompted to confirm, click OK.

### **Symptom**

Upgrading Access Point Firmware.

### **Solution**

Firmware is the software that is installed on the Access Point at the factory. Some problems can be solved by installing a new version of the firmware.

For details on how to download a firmware update from the 3Com customer support Web site and install it on your Access Point, see “Firmware Auto Upgrade” on page 57 or “Firmware Manual Upgrade” on page 58.

# B OBTAINING SUPPORT FOR YOUR 3COM PRODUCT

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## Telephone Technical Support and Repair

To obtain telephone support as part of your warranty and other service benefits, you must first register your product at:

**<http://eSupport.3Com.com/>**

When you contact 3Com for assistance, have the following information ready:

- Product model name, part number, and serial number
- A list of system hardware and software, including revision level
- Diagnostic error messages
- Details about recent configuration changes, if applicable

To send a product directly to 3Com for repair, you must first obtain a return materials authorization number (RMA). Products sent to 3Com without authorization numbers clearly marked on the outside of the package will be returned to the sender unopened, at the sender's expense. If your product is registered



and under warranty, you can obtain an RMA number online at **<http://eSupport.3Com.com/>**. First-time users must apply for a user name and password.

Telephone numbers are correct at the time of publication. Find a current directory of 3Com resources by region at:

**<http://csoweb4.3Com.com/contactus/>**

## C

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Customer shall take all steps necessary to protect Wind River's and its licensors' proprietary rights in the Run-Time Module and to ensure that each Run-Time Module distributed by Customer will be accompanied by a localized copy of an End-User License Agreement.

Such End-User License Agreement shall prohibit the End User from: (i) copying the Run-Time Module, except for archive purposes consistent with the End User's archive procedures; (ii) transferring the Run-Time Module to a third party apart from the Target Application; (iii) modifying, decompiling, disassembling, reverse engineering or otherwise attempting to derive the Source Code of the Run-Time Module; (iv) exporting the Run-Time Module or underlying technology in contravention of applicable U.S. and foreign export laws and regulations; and (v) using the Run-Time Module other than in connection with operation of the Target Application.

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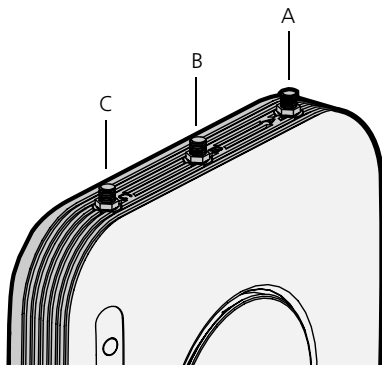
# D

## APPENDIX

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### Antennas Used per Mode

The AP has three external antenna connectors, labelled A, B and C, as shown below.



**Figure 35** External Antenna Connectors

In some modes, not all of the connectors are in use.

The following table defines which external antenna connectors are used in which mode:

Mode	Antennas Used
2x3	A,B,C
2x2	A,C
1x1	A

*Note: When using 1x1 mode, either in WDS mode or in AP mode using the 3CWE591 Omni antenna, only connector A is active. This is the connector on the far right, looking at the AP with the 3Com logo facing you. No other connectors are active in this mode.*

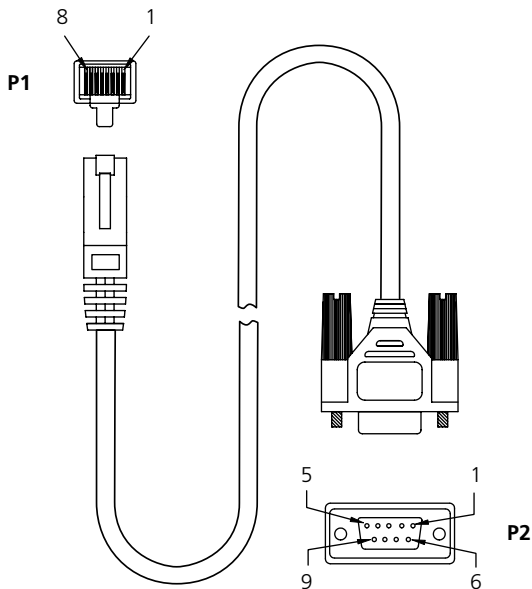
When in WDS mode:

- select 1X1 mode when peers are omni-directional, distributed around the central node in a point-multipoint link.
- select 2X2 mode for a point-to-point link, using either the 3CWE596 or 3CW598 panel antenna. The antennas must both point in the same direction, with one antenna rotated 90 degrees, in order for MIMO to function correctly.

*Note: In 2x2 mode, the two outer connectors (A and C) are active. The connector in the middle (B) is not active and should not be used.*

---

## Console Cable Pin-out



**Figure 36** RJ45 to D-SUB 9 pin cable

<b>P1</b>	<b>WIRE COLOR</b>	<b>P2</b>
<b>Pin no.</b>		<b>Pin no.</b>
8	YELLOW	1
6	BROWN	2
2	GRAY	3
1	GREEN	4
5	RED	5
3	BLUE	6
4	BLACK	7
7	WHITE	8

For part numbers and purchasing information, visit the 3COM Web site (<http://www.3com.com>).





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